

REMARKS/ARGUMENTS

The Office Action mailed 06/05/2003 has been carefully reviewed. Reconsideration of this application, as amended and in view of the following remarks, is respectfully requested.

35 USC §112 Rejection

Claims 1, 3-5 and 9 were rejected under 35 USC §112, second paragraph, as allegedly failing to particularly point out and distinctly claim the invention. The Examiner stated, "according to Figure 1, there are two lasing chambers."

The amended claims now present for examination specify "a first lasing chamber," "a second lasing chamber," "trivalent titanium ions dissolved in a liquid host within said first lasing chamber," "trivalent titanium ions dissolved in a liquid host within said second lasing chamber," and "a closed loop circulation system for circulating said trivalent titanium ions dissolved in a liquid host through said first lasing chamber in a first linear direction into said closed loop circulation system and into said second lasing chamber and through said second lasing chamber in a second linear direction into said closed loop circulation system and back into said first lasing chamber, said second linear direction being opposite to said first linear direction."

Applicant respectfully submits that the amended claims now present for examination accurately define the invention and are believed to overcome the Examiner's rejection under 35 USC §112, second paragraph.

35 USC §103(a) Rejection

Claims 1, 3-5 and 9 were rejected under 35 U.S.C. §103(a) over Kocher et al (U. S. Patent No. 3,663,891) in view of Scheps (U. S. Patent No. 5,307,358).

The Kocher et al reference shows, "A cell for use in a circulating liquid laser comprising an elongated cylindrical active region and an input and an output chamber mounted coaxially at opposite ends of the active region. A window is positioned coaxially in each chamber. Liquid active material entering the input chamber flows around the window so that large scale disturbances which may exist in the entering liquid are smoothed prior to the liquid entering the active region," (Abstract) and "The cell comprises an active region having a longitudinal axis and an input chamber coupled to the active region. Flow control means located within the input chamber maintains the active material apart from the longitudinal axis in and adjacent to the input chamber thereby permitting any large scale disturbances which may be present in the entering liquid to be smoothed when the active material is proximate the active region," (col. 2, lines 66-73).

The Scheps reference shows, "Solid state crystalline laser gain elements which are doped with impurity ions for laser operation are highly suitable for this type of laser, as are ion doped glasses or other amorphous materials. In addition, a suitable laser gain element can be constructed of a hollow fluid-containing cell where the cell is fabricated in the shape of a Brewster dispersing prism and the cell is filled with a laser gain fluid such as a dye solution or a chelate solution," (Abstract) and "In general, gain elements are doped materials. By this it is meant that there is a host material in the case of a solid state laser which can be either a glass or amorphous material or a crystalline material. This material is doped to a certain extent, anywhere from, generally, 0.01 percent up to 100 percent doping, with an impurity ion such as Cr³⁺ or Nd³⁺. For the case of liquids, generally, there is a low concentration solute which acts similar to a dopant, dissolved in a solvent" (col. 9, lines 7-16).

The Kocher et al and Scheps references do not show the elements of the claimed invention nor do they show the claimed combination. There is no teaching or suggestion in the references to form a proper combination.

The Scheps reference shows doping of solid state crystalline laser gain elements with material that includes a Ti³⁺ dopant; however, in the case of a liquid, the Scheps reference does not show doping. In the case of a liquid, the Scheps reference shows only, "a low concentration solute which acts similar to a dopant, dissolved in a solvent," and does not show the claimed Ti³⁺ dissolved in a liquid host.

The Kocher et al reference shows, "Flow control means located within the input chamber maintains the active material apart from the longitudinal axis in and adjacent to the input chamber thereby permitting any large scale disturbances which may be present in the entering liquid to be smoothed when the active material is proximate the active region." The Kocher et al reference does not show the claimed, "a closed loop circulation system for circulating said trivalent titanium ions dissolved in a liquid host through said first lasing chamber in a first linear direction into said closed loop circulation system and into said second lasing chamber and through said second lasing chamber in a second linear direction into said closed loop circulation system and back into said first lasing chamber, said second linear direction being opposite to said first linear direction."

There is no teaching or suggestion in the Kocher et al or Scheps references to form a combination that would constitute the claimed invention.

SUMMARY

The undersigned respectfully submits that in view of the foregoing amendments and the remarks, the rejections of the claims raised in the Office Action dated 06/05/2003 have been fully addressed and overcome. The present application is believed to be in condition for allowance. It is respectfully requested that this application be reconsidered, that the claims be allowed, and that this case be passed to issue. If it is believed that a telephone conversation would expedite the prosecution of the present application, or clarify matters with regard to its allowance, the Examiner is invited to call the undersigned attorney at (925) 424-6897.

Respectfully submitted,



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